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UDC 621·869·821 : 624·04

IS : 11982 - 1987

Indian Standard

(Reaffirmed 2003)

DESIGN RATING AND SAFE WORKING LOAD FOR GENERAL PURPOSE FLAT PALLET FOR THROUGH TRANSIT OF GOODS

1. Scope — Provides guidance on the relationship between the design rating of a pallet and its safe working load in practice, which is dependent on the nature of the load being carried.

1.1 It is applicable to general purpose flat pallets whose rating has been determined by testing in accordance with IS : 6219-1977 'Test code for non-expendable flat pallets (*second revision*)' using the performance requirements set out in Indian Standard for performance requirements for general purpose flat pallets for through transit of goods (*under preparation*).

2. Terminology — For the purpose of this standard, the following definition shall apply.

2.1 *Rating* (*R*) — The designed load capacity of the pallet, in kilograms, assuming an evenly and uniformly distributed load.

3. Relationship Between Rating and Safe Working Load

3.1 For through transit, pallets are often loaded in such a way that the load being carried (the payload) contributes to the overall performance of the loaded pallet. Therefore, a given design of pallet is suitable for several different payloads and shall have several different safe working loads dependent on the nature of the particular payload.

3.2 A given pallet, without payload, has only one rating (*R*), its designed load capacity with a uniformly distributed load. This rating, expressed in kilograms, is determined by test and cannot be changed, for example, a rating of 1 000 kg might be referred to in a test report as 1 000 kg *R*.

3.3 During palletization, it is the duty of the responsible supervisor to ensure that the safe working load is achieved, where appropriate, but not exceeded. Table 1 shows the relationship, for different types of load, between the pallet rating (*R*) and the actual payload on the pallet which may be considered the safe working load.

Pallets Sectional Committee, MCPD 5 [Ref : Doc : MCPD 5 (705)]

EXPLANATORY NOTE

In the preparation of this standard, the assistance has been derived from Doc:ISO/TC 51 N 388 'Draft technical report for general purpose flat pallets for through transit of goods — Design rating and safe working load', issued by the International Organization for Standardization (ISO).

Adopted 13 February 1987

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

TABLE 1 RATING AND SAFE WORKING LOAD RELATIONSHIP WITH DIFFERENT TYPES OF PAYLOAD

(*Clause* 3.3)

Severity of Load on the Pallet	Example of Goods on the Pallet	Formula* for Maximum Bending Moment in Deckboards	Area of Deck Under Load (*A* = Area of Pallet Deck)	Safe Working Load as a Fraction of Rating†	Example of Safe Working Load on a 1 000 kg *R* Pallet
(1)	(2)	(3)	(4)	(5)	(6)
Point load	Electric motor	$\frac{wl}{4}$	Less than 0·3 *A*	0·6 *R*	600 kg
Patch or concentrated load	Large case-plan dimensions smaller than pallet	$\frac{wl}{ka}$ †	Greater than 0·3 *A* and less than 0·85 *A*	0·9 *R*	900 kg
Uniformly distributed or articulated load (UDL)	Cold flowing butyl rubber in sacks	$\frac{wl}{8}$	Greater than 0·85*A*	1·0 *R*	1 000 kg
Unbonded uniformly placed load	Non-interlocked cases	$\frac{wl}{kb}$ †	Greater than 0·85*A*	1·0 *R*	1 000 kg
Bonded uniformly placed load	Interlocked cases in regular pattern	$\frac{wl}{kc}$ †	Greater than 0·85*A*	1·1 to 1·9 *R*	1 100 to 1 900 kg
Solid load	Horizontal paving slabs	zero‡	Greater than 0·85*A*	2·25 *R*	2 250 kg

*Standard mathematical formula for boards in simple bending.

†*ka*, *kb*, and *kc* and fraction of *R* in col 5 are determined by laboratory test given the particular shape, size, pattern and nature of goods stacked on the pallet.

‡Limit for solid incompressible loads is the compression strength of pallet blocks and height of stacking.

Printed at Arcee Press, New Delhi, India